

To earn an Energy Star rating, homes must also undergo an inspection by a certified home energy rater who examines construction plans and conducts post-construction evaluations, including a blower door test (to test the envelope infiltration) and a duct infiltration test. The rater uses this data to assign the home a relative performance score, called a HERS Index Score. The index is normalized to the climatic zone, size, and type of the house. A home built to current market standard (2006 International Energy Conservation Code standard) is given a rating of 100.<sup>3</sup> Lower HERS ratings for a house indicate higher efficiency; i.e., a HERS rating of 60 means that the house is 40% more energy efficient than a similar one that is constructed to the current market standards. A score of 0 corresponds to a net zero energy home. A standard resale house has a rating of 130. Typically, a HERS rating of 85 is required to achieve Energy Star certification. Residential Energy Services Network (RESNET) is a standard-making body that certifies the raters as well as the procedures and is responsible for ensuring consistency and quality in certification.

Within the United States, there are other comprehensive, but smaller or regional, programs that promote energy efficiency in new housing construction, such as LEED for Homes, National Association of Home Builders' Green Building Standard, EarthCraft (in the Southeast), Earth Advantage Label (in the Pacific Northwest), and GreenPoint Rated certification (in California).<sup>4</sup> These rating systems generally exceed the building performance of Energy Star and promote comprehensive green building technologies and materials.

Almost all rating systems rely on some version of modeled and hypothetical energy use. While the construction is tested for leakage and other inefficiencies, the rating

---

<sup>3</sup> Fairey et al. (2000) provides a historical overview of the development of HERS ratings in the United States.

<sup>4</sup> By 2012, only about 15,000 U.S. homes are LEED certified. On average, about 400,000 new homes are constructed every year in the United States. (See <http://www.usgbc.org/ShowFile.aspx?DocumentID=2683>, <http://www.census.gov/construction/nrc/>)